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Psychometric properties of the Alabama Parenting Questionnaire - Preschool revision (APQ-Pr) in 3 year-old Spanish preschoolers --Manuscript Draft--

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Abstract:	<p>Abstract</p> <p>Parenting practices should be assessed and taken into account at an early age, since it is well documented that they are strongly related to children's development. This study provides data on the psychometric properties of a Spanish version of the Alabama Parenting Questionnaire for Preschool children (APQ-Pr). A community sample of 622 (310 boys and 312 girls) 3 year-old children and their parents, participated in the study. Data were obtained from parents' reports and correspond to a semi-structured diagnostic interview and self-report questionnaires evaluating parenting and children's psychological states. Principal component analysis yielded 3 dimensions: Positive Parenting, Inconsistent Parenting and Negligent/Punitive Parenting. These factors showed moderate to good internal consistence (alpha values ranged from .56 to .78). Inconsistent Parenting scores achieved the strongest associations with external measures of psychopathology, especially for externalizing and conduct problems, as well as for functional impairment, the poorest associations being for the Positive Parenting scores. Results support the validity of the Spanish APQ-Pr, which is potentially a useful measure for the study of parenting practices regarding preschool children and their relation to Conduct Problems.</p>
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**Psychometric properties of the Alabama Parenting Questionnaire – Preschool
revision (APQ-Pr) in 3 year-old Spanish preschoolers**

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Abstract

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4 documented that they are strongly related to children's development. This study provides data
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6 on the psychometric properties of a Spanish version of the Alabama Parenting Questionnaire
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18 Negligent/Punitive Parenting. These factors showed moderate to good internal consistence
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Introduction

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2 Conduct problems (CP) are one of the most common reasons for children being
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4 referred to mental health services (Frick & Silverthorn, 2001). Of the several risk factors that
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6 have been associated with the development and maintenance of conduct problems in
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8 childhood, parenting practices are among the best established (Chamberlain & Patterson,
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10 1995; Dadds, 1995; Patterson & Reid, 1984). The most associated parenting practices include
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12 harsh discipline, inconsistent discipline, poor supervision, lack of involvement and rigid
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14 discipline (Capaldi & Fisher, 1997; Chamberlain, Reid, Ray). Despite this strong association,
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16 it still has to be studied in terms of causality and more research is needed to test different
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18 models of that association, as well as the possible differentiation between certain parenting
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20 practices and specific types of conduct disorder (Frick & McMahon, 2008).
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26 One of the most commonly used instruments in the study of the parenting practices
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28 related to CP in childhood and adolescence is the *Alabama Parenting Questionnaire* (APQ,
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30 Frick, 1991). The APQ is a 42-item questionnaire designed to measure parenting
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32 characteristics that have been previously associated with disruptive behaviors in children
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34 between the ages 6 and 13. Five subscales were rationally derived on the basis of face
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36 validity: Parental Involvement, Positive Parenting, Poor Monitoring/Supervision, Inconsistent
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38 Discipline and Corporal Punishment rated on a 5-point Likert-type scale (1= *Never* to 5=
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40 *Always*). Several studies tested the scale reliability of parents form from both clinical (Shelton
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42 et al., 1996) and community samples (Dadds, Maujean, & Fraser, 2003) with children aged
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44 from 9 to 13 and 4 to 9 respectively, obtaining adequate internal consistency for the scales
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46 with the exception of Corporal Punishment and Poor Monitoring (Cronbach's $\alpha = .46 - .80$).
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48 Positive Parenting and Parental Involvement scales were highly correlated ($r = .85$)
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50 suggesting that there was measurement overlap between the constructs. (Essau, Sasagawa, &
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52 Frick, 2006) presented a factorial analysis of a general German population aged 10 to 14 that
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1 empirically supported the five specified parenting dimensions of the original version for the
2 adolescent self-reported version. The APQ factor structure of the parent and child versions
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4 was also assessed by Wells et al., (2000) in a sample of 7-9 year-old children with combined
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6 Attention Deficit Hyperactivity Disorder (ADHD) resulting in a 3-factor solution: Positive
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8 Involvement, Ineffective Discipline and Deficient Monitoring. Since its construction,
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10 cumulative evidence for the validity of APQ has been gathered, with APQ being seemingly
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12 sensitive to design interventions to treat conduct problems (Feinfield & Baker, 2004;
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14 Lochman & Wells, 2002; Wells et al., 2000), there is also a large body of evidence for the
15
16 high association between APQ scales and conduct problems in clinically-referred children
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18 (Chi & Hinshaw, 2002; Hinshaw, 2002) and non-referred samples (Frick, Kimonis,
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20 Dandreaux, & Farell, 2003; Oxford, Cavell, & Hughes, 2003).
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27 Most research in this area has been done with children and adolescents; however there
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29 is now much evidence that the origins of aggressive behavior and behavioral disorders can be
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31 placed in preschool years (Barkley et al., 2002; Cunningham & Boyle, 2002; Loeber &
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33 Farrington, 2000; Sonuga-Barke, Auerbach, Campbell, Daley, & Thompson, 2005). With this
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35 growing interest in the prevention of conduct disorders, the need for adequate assessment in
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37 order to contribute to early detection and accurate intervention programs in preschool years
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39 has emerged. Although Dadds et al., (2003) included preschool samples in their study; they
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41 used the original version addressed at older children. Clearly some items in the original APQ
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43 are completely inappropriate for ages under 6. Only one study (Clerkin, Marks, Policaro, &
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45 Halperin, 2007) has explored the instrument properties of a version adapted to preschoolers
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47 (APQ-Pr), in a sample of hyperactive-inattentive and non impaired controls aged 3 to 6,
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49 obtaining a 3-factor solution: Positive Parenting, Inconsistent Parenting and Punitive
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1 The changing relation between age and parenting practices should be taken into
2 account and reflected in the items when proposing a measure for preschoolers, since it is well
3 documented that positive and negative parenting practices change over time (Frick, Christian,
4 & Wooton, 1999; Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004) and are strongly
5 related to child development. Moreover, no preschool instrument dealing with this subject is
6 available for the Spanish population. This study aims to test the factor structure of the APQ-Pr
7 in a large Spanish community sample, as well as providing evidence for its validity in relation
8 to external variables, in order to study the parenting practices that are most commonly related
9 to conduct problems in the preschool population. On the light of the actual research we expect
10 association between problems in parenting, as considered on the APQ, and conduct problems.
11 Also we would expect a simpler factor structure that supports the overlapping between some
12 of the five dimensions originally proposed which has been found in other studies using this
13 instrument with preschoolers.

31 Method

34 Participants

36 Data used in this work correspond to the first year of a longitudinal study of
37 behavioral problems in preschool children (Ezpeleta, de la Osa, & Domènech, 2011). The
38 research was started with a two phase design, with an initial random sample of 2,283 children
39 selected from the census of preschoolers (3 years old) in Barcelona in the 2009-10 academic
40 year. Children with mental retardation or pervasive developmental disorders were excluded.
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42 The proportion of participants in the first phase was 58.7% ($N = 1,341$ families) and
43 no differences emerged for sex ($p = .95$) when comparing participants and refusals. However,
44 the proportion of refusals was statistically higher for families in low socioeconomic groups
45 (Ezpeleta et al., 2011) ($p < .001$). The screening for including children in the second phase
46 was carried out with the parents' version of the Strengths and Difficulties Questionnaire for 3
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and 4 years old (SDQ³⁻⁴; Goodman, 1997). A random sample including 30% of children with negative scores in the screening and all the children with a positive screening score were invited to continue with the longitudinal research. The final second phase sample included 89.4% of the families asked to continue ($N = 622$ children) and no statistical differences were found when participants and refusals were compared for sex ($p = .820$) or type of school ($p = .850$). Table 1 shows the characteristics of the sample. Children's mean age was 3.0 ($SD = 0.16$) and 310 were boys (49.8%).

--- INSERT TABLE 1 ---

Measures

APQ The Alabama Parenting Questionnaire (Frick, 1991)

The APQ-Pr- consists of 42 adapted items from the original APQ (Frick, 1991), rated on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). Eight items from the original questionnaire that we deemed inappropriate for preschoolers were adapted to age (see below). The resulting items are listed in Table 2. To clarify interpretation in this study, the original item numeration has been maintained. The APQ-Pr was available for 603 children (96.9% of the sample). Respondents were parents (296 mothers, 33 fathers and 274 mother-father pairs). No statistical differences were found for sex ($p = .642$) or socioeconomic status ($p = .857$) when comparing children with completed or missing questionnaires.

The English version of the instrument was translated into Spanish after receiving permission from the author and was adapted to the children's age following the widely accepted guidelines for the proper use of instruments in cross-cultural assessment (Hambleton, 1994). Two bilingual clinical psychologists translated the questionnaire. Differences between translations were discussed and revised and the final result was reported to and accepted by the author.

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As mentioned earlier, Clerkin et al. (2007) used an adapted version of the original APQ consisting of a reduced version in which the items subjectively deemed inappropriate for preschoolers were eliminated prior to the application to parents. We preferred to substitute those items with developmentally adequate ones (see Table 2: items 6, 10 and 17 from Positive Parenting factor; 21, 28 and 30 from Inconsistent Parenting and 19 and 23 from Negligent/Punitive). This enabled us to keep the original proposal's structure, but also avoid factors with a low number of items. We felt that the item should keep the "spirit" of the original scale and reflect similar behavior or parenting attitudes. For example, the original version of item 17 says: *Your child goes out with friends you don't know*, which was eliminated from (Clerkin et al., 2007)'s version and our proposal is to say *You know who he usually plays with in the playground and know their families*.

The *Diagnostic Interview of Children and Adolescents for Parents of Preschool Children and Young Children (DICA-PPYC)* (Reich & Ezpeleta, 2009) was used to assess children's psychopathology according to DSM-IV taxonomy (American Psychiatric Association, 1994). This interview has been recently adapted and validated for the Spanish preschool population with good psychometric properties (Ezpeleta, de la Osa, Granero, Domènech, & Reich, 2011). The diagnoses included in this study were attention-deficit/ hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and conduct disorder (CD). Subthreshold conditions were defined as cases that did not meet threshold criteria but indicated impairment.

The *Child Behavior Checklist* (Achenbach & Rescorla, 2001) was used to measure behavioral and emotional problems in children. The version for children aged 1 and a half to 5 years contains 100 items reported by parents with three ordinal response options (0-*not true*; 1-*somewhat or sometimes true*; and 2-*very true or often true*). The seven syndrome scales and the three broad scales were used in this study, whose Chronbach's alpha values ranged between poor ($\alpha = .42$ for scale somatic complaints) to excellent ($\alpha = .92$ for the total score).

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The *Children's Global Assessment Scale* (CGAS; Shaffer et al., 1983) was used to assess global functional impairment based on children's psychopathology. The total score, which ranges between 0 (the highest impairment value) to 100 (the lowest impairment score) was used.

Procedure

The project was approved by the ethics review committee of the authors' institution. The heads of the schools participating, as well as the children's parents, received a complete description of the study. Families were recruited at the schools and gave written consent. All parents of children from P3 (3-year-olds) in the participating schools were invited to answer the SDQ³⁻⁴ at home and returned it to the schools. Families who agreed and met the screening criteria were contacted by telephone and interviewed at the school. Interviewers were previously trained and were blind to the children's screening group. After the interview, the interviewer completed the CGAS and parents answered the CBCL-1^{1/2}-5 and the APQ-Pr.

Statistical Analysis

Statistical analysis was carried out with SPSS19 for Windows. Because of the multistage sample, data corresponding to the second phase were analysed through Complex Samples tools in SPSS, creating a plan file with sampling weights inversely proportional to the probability of the participant being selected.

Items were analyzed using principal components analysis (PCA) with direct oblimum and varimax rotation. Listwise deletion was conducted. Multiple component structures were explored, beginning with eigenvalues greater than 1. Components were also determined based on the Cattell's scree test and the interpretability of the item groupings. Items showing cross-loading were allocated to the factor with the highest loading, when the difference with respect to the second highest value (in absolute value) was above .10. In contrast, when the difference between factor loadings was below .10, two criteria were taken into account: the contribution

of the item to the internal consistency of each scale based on *Cronbach's α if item deleted* coefficient, and their content. Cronbach's alpha evaluated internal consistency of the resulting scales.

The association between APQ-Pr dimensions and raw scores on the CBC was calculated with Pearson's correlation (r). Because of the large sample size and the high statistical power, low correlation values tended to be statistically significant, and so only r -coefficients with good effect sizes ($|r| \geq .30$) were considered relevant.

The association between APQ-Pr dimensions and the presence of DSM disruptive disorders (ADHD, ODD and CD) was analyzed through binary logistic regressions. The three empirical dimensions were entered together in the models in order to value the specific contribution of each factor to the possibility of each disorder appearing. The area under the receiver operator curve (AUC) measured the discriminative accuracy of models.

The association between APQ-Pr dimensions and impairment (measured as CGAS total score) was analyzed through general linear models. The three empirical dimensions were entered simultaneously and the total predictive accuracy was evaluated using the R^2 coefficient.

Results

Factor Structure and Internal Consistency Reliability

The Kaiser-Meyer-Olkin index of sampling adequacy was satisfactory ($KMO = .743$) and the Bartlett sphericity test was statistically significant ($p < .001$). From the initial 42 items, six items were excluded from the final solution due to loadings below .25 on all factors. Thus, the selected final solution of the 36 remaining items comprised three factors explaining 27.1% of the variance (Table 2): (a) 14 items with higher loadings in factor 1 were related to Positive Parenting; (b) 11 items with higher loadings in factor 2 assessed Inconsistent Parenting; and (c) 10 items with higher loadings in factor 3 were related to Negligent/Punitive Practices. In

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addition, item 29 (“You don’t tell your child where you are going”) showed crossloadings on factors 2 and 3 and regarding its content it was maintained. Moreover, the sign of all factor loadings was consistent with the wording of the items. Similar results after varimax and oblimin rotation were found, the latter with factor correlations below .20 in absolute value; therefore, only the varimax solution is presented, following Clerkin et al. (2007). Internal consistency was moderate to good (.78, .65, and .56, respectively). The total score for each scale is obtained with the non-weighted sum of the item values, after reverse items have been codified, with higher scores indicating a greater presence of the construct. Further analyses were based on summated rating scale scores.

--- INSERT TABLE 2 ---

Association between APQ-Pr scores and CBCL

Table 3 shows the Pearson’s correlation coefficients evaluating the associations between APQ-Pr and CBCL. The association between Inconsistent Parenting and CBCL aggressive behavior, externalizing and total scales was significant (r coefficients around .30), showing an acceptable convergent validity. For the other measures considered, correlation coefficients were lower, supporting the discriminant validity of the APQ-Pr scores.

--- INSERT TABLE 3 ---

Association between APQ-Pr dimensions and DSM-IV disorders and impairment

Table 4 shows the logistic models evaluating the association between the APQ-PR dimensions and the presence of disruptive disorders/subthreshold and the general linear model evaluating the association between APQ-Pr factors and impairment (measured as the total CGAS score). Positive Parenting was only negatively associated to the presence of conduct disorder (the higher the factor score, the lower the odds of disorder; $OR = 0.90$; $p = .008$). Negligent/Punitive Parenting was also a risk factor for the presence of conduct disorder ($OR = 1.29$; $p = .009$). Inconsistent Parenting achieved significant association with all the DSM-IV

measures, except for the presence of conduct disorder. The discriminative accuracy of logistic models was statistically significant and good for the presence of DSM-IV disorders (AUC between .65 and .75) and between poor to moderate for the presence of DSM-IV subthreshold (AUC from .58 to .64). Predictive accuracy of linear models was significant (except for the number of conduct disorder symptoms) but poor.

Higher impairment was predicted by high scores in Inconsistent Parenting ($p < .001$). Predictive accuracy for the model was low ($R^2 = .04$).

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Distribution of APQ-Pr scores

The annex shows the mean and standard deviation for the raw PQ-Pr scores. No statistical differences by sex appeared. (Norms are available from authors).

Discussion

One of the main objectives of the study was to examine the factor structure of APQ-Pr, a modified version of the original APQ, in a large community sample of 3 year-old children. Overall, exploratory analysis supported a 3-factor solution similar to that reported by Clerkin et al. (2007) in a clinical sample of preschoolers with ADHD and a community sample: Positive Involvement, Inconsistent Parenting and Negligent/Punitive Parenting. Although the percentage of explained variance we found is modest (27.1% extracting 3 factors with 36 items), this value can be considered similar to the 32.3% obtained by Clerkin et al. (2007) when extracted 3 factors with 32 items. One explanation could be the skewness of some items, due to social desirability of parents when responding about their own parenting practices.

We found a more general Positive Involvement factor that included items from two original factors theoretically proposed by Frick (1991), Positive Parenting and Parenting Involvement, indicating the substantial overlap between these two constructs, as pointed out

1 by Dadds et al. (2003), Shelton et al. (1996), and Wells et al. (2000). The internal structure we
2 obtained is different from the one proposed by Essau (2006) working with self-reporting
3 adolescents, but similar to Clerkin's et al. (2007) also working with preschoolers and the one
4 by Wells et al. (2000) working with a 7-9 year-old clinical population. It seems that the 3-
5 factor solution is better for younger children and enhances the idea that the relations between
6 parenting practices change over time (Frick et al., 1999; Penelo, Viladrich & Doménech,
7 2010). The difference in informants could also explain part of these differences.
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17 Also different from what is reported in adolescents (Essau et al., 2006), no differences
18 between parenting styles by sex were found in preschoolers, similar to the findings of Dadds
19 et al., (2003) again indicating the need for developmentally prepared instruments to study the
20 trends in parenting and their association with CP (Frick et al., 1999). Not only the role of age
21 but also the possible interaction with sex in particular CP should be studied.
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29 The validity of the APQ-Pr was also supported by the association with both
30 dimensional and categorical measures of CP. The association between CBCL's aggressive
31 behavior and externalizing scales and Inconsistent Parenting specifically, indicates the
32 adequacy of APQ-Pr for the study of the relation between Parenting practices and this specific
33 kind of problem as highlighted in past research (Burke, Pardini, & Loeber, 2008; Cunningham
34 & Boyle, 2002; Chamberlain & Patterson, 1995; Lanza & Drabick, 2011). Associations
35 between different parenting styles and different problems, specifically negligent and punitive
36 practices with Conduct Disorders, but no other type, the relation between Positive Parenting
37 and the absence of Conduct disorder or the association with subthreshold syndromes, make
38 the APQ-Pr an adequate instrument for use in the research of differential aspects of distinct
39 CD. The association between some parenting practices and poor functional impairment of
40 children supports the idea that the APQ-Pr in its Spanish version is a potentially useful
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measure, as impairment related to CP is a determinant factor for seeking help in Mental Health services (Angold et al., 1998).

This is the first study to have been conducted with a large community sample of preschoolers. Data provide norms for Spanish 3 year-olds on which to base cut-off scores as they belong to a large community sample, solving one weak point of APQ and most parenting measures: lack of norms (Essau et al., 2006). Is still necessary to study how these norms would generalize to other populations. Beside the difference in some items, similarity between the number and content of the factors with Clerkin's study using a USA sample suggests that this 3-factor structure could at least work properly in Western societies. Thus, it seems reasonable to assume that the APQ-Pr maintains a similar structure in preschoolers, but more research should be done in this direction.

There are some limitations on our study; we studied a sample of a general population where psychopathology is not very common, and this could have affected the discriminative power. Finally, few families of low socioeconomic status participated, and this could have led to some bias. In addition, mothers or fathers could indistinctly answer the questionnaires, so there may be differences in the internal structure depending on the informant.

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Table 1. Sociodemographics of sample ($N = 622$).

Child's age (mean; <i>SD</i>)		2.97 (0.16)
Child's sex (n; %)	Male	310 (49.8%)
Child's race/ethnicity (n; %)	White	553 (88.9%)
	American Hispanic	49 (7.9%)
	African	2 (0.3%)
	Asian	6 (1.0%)
	Other	12 (1.9%)
Mother's age (mean; <i>SD</i>)		36.4 (4.7)
Father's age (mean; <i>SD</i>)		38.6 (5.8)
¹ Mother's education (n; %)	Graduate/university	340 (54.7%)
	Compulsory school (until 16 years)	178 (28.6%)
	Primary school (until 13 years)	92 (14.8%)
	Less	12 (1.9%)
¹ Father's education (n; %)	Graduate/university	281 (45.2%)
	Compulsory school (until 16 years)	196 (31.5%)
	Primary school (until 13 years)	122 (19.6%)
	Less	13 (2.1%)
Family's socioeconomic status (Hollingshead, 1975)	High	205 (33.0%)
	Mean-high	195 (31.4%)
	Mean	88 (14.1%)
	Mean-low	99 (15.9%)
	Low	35 (5.6%)

¹Level of studies not available for 10 parents. *SD*: standard deviation.

Table 2. Principal Component Analysis with varimax rotation of APQ-Pr.

Item	F1 Positive parenting	F2 Inconsisten t parenting	F3 Negligent Punitive	
1. You have a friendly talk with your child	<u>.50</u>	-.20	-.02	
2. You let your child know when he/she is doing a good job with something	<u>.64</u>	-.07	.10	
6. <i>You try to get information about how he/she behaves when out of home</i>	<u>.43</u>	-.12	-.22	
7. You play games or do other fun things with your child	<u>.46</u>	-.06	-.15	
9. You ask your child about his/her day in school	<u>.33</u>	-.04	-.06	
10. <i>You try to know if everything went right when he/she goes out without you</i>	<u>.36</u>	-.11	-.12	
11. You help your child with his/her homework	<u>.37</u>	-.07	-.20	
13. You compliment your child when he/she does something well	<u>.68</u>	-.06	.06	
14. You ask your child about his/her plans for the coming day	<u>.57</u>	-.04	-.01	
16. You praise your child if he/she behaves well	<u>.66</u>	.02	.06	
17. <i>You know who he/she usually plays with in the playground and know their parents</i>	<u>.43</u>	.05	-.13	
18. You hug or kiss your child when he/she has done something well	<u>.63</u>	.02	.01	
20. You talk to your child about his/her friends	<u>.61</u>	.05	-.17	
27. You tell your child that you like it when he/she helps around the house	<u>.56</u>	-.08	-.12	
3. You threaten to punish your child and then do not actually punish him/her	.01	<u>.68</u>	-.03	
8. Your child talks you out of being punished after he/she has done something wrong	.13	<u>.68</u>	.02	
12. You feel that getting your child to obey you is more trouble than it's worth	-.21	<u>.49</u>	.03	
21. <i>Your child is allowed to watch TV alone after dinner</i>	.05	<u>.43</u>	.23	
22. You let your child off a punishment early (e.g., lift restrictions earlier than you originally said)	.04	<u>.71</u>	.03	
25. Your child is not punished when he/she has done something wrong	-.07	<u>.37</u>	.13	
28. <i>Your child goes to bed after 9P.M. or has no fixed bedtime</i>	-.05	<u>.31</u>	.19	
31. The punishment you give your child depends on your mood	-.30	<u>.31</u>	-.22	
33. You spank your child with your hand when he/she has done something wrong	-.09	<u>.29</u>	.12	
39. You yell or scream at your child when he/she has done something wrong	-.11	<u>.31</u>	-.20	
41. You use time out (make him/her sit or stand in a corner) as a punishment	.08	<u>-.37</u>	.14	
29. You don't tell your child where you are going	-.11	<u>.31</u>	<u>.31</u>	
4. You volunteer to help with special activities that your child is involved in	.27	.04	<u>-.34</u>	
19. <i>You usually look in his/her schoolbag and his/her notebook everyday</i>	.21	.00	<u>-.30</u>	
23. <i>You explain the family's plans to him/her before doing them</i>	.29	-.11	<u>-.37</u>	
24. You get so busy that you forget where your child is and what he/she is doing	-.10	.05	<u>.57</u>	
26. You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school	.14	.05	<u>-.62</u>	
32. Your child is at home without adult supervision	.02	.04	<u>.54</u>	
35. You slap your child when he/she has done something wrong	-.08	.11	<u>.39</u>	
37. You send your child to his/her room as a punishment	.03	.03	<u>.33</u>	
38. You hit your child with a belt, switch, or other object when he/she has done something wrong	.06	-.06	<u>.64</u>	
40. You calmly explain to your child why his/her behavior was wrong when he/she misbehaves	.16	-.17	<u>-.31</u>	
	Cronbach's alpha (number of items)*	.78 (14)	.64 (12)	.56 (11)
Items eliminated				
5. You reward or give something extra to your child for obeying you or behaving well				
15. You drive your child to a special activity				
30. <i>Your child arrives late to school in the mornings</i>				
34. You ignore your child when he/she is misbehaving				
36. You take away privileges or money from your child as a punishment				
42. You give your child extra chores as a punishment				

Note: rotated factor loadings $\geq .30$ are in bold; items adapted to preschoolers are in italics.

*Cronbach's a value of each subscale based on items with factor loadings underlined

Table 3. Association between APQ-Pr dimensions and CBCL.

APQ-Pr dimensions →	Positive parenting	Inconsistent parenting	Negligent-Punitive
CBC: Emotionally reactive	-.03	.19	.09
CBC: Anxious-depressed	-.02	.21	.14
CBC: Somatic complaints	.04	.21	.11
CBC: Withdrawn	-.07	.18	.09
CBC: Sleep problems	.03	.24	-.02
CBC: Attention problems	-.04	.23	.16
CBC: Aggressive behavior	-.07	.30*	.15
CBC: Internalizing	-.02	.25	.14
CBC: Externalizing	-.07	.32*	.17
CBC: Total	-.03	.32*	.16

*Bold, correlations with good effect size ($|r| \geq .30$).

Table 4. Association between APQ-Pr dimensions and DSM disorders, symptoms and impairment.

	Positive parenting	Inconsistent parent.	Negligent/Punitive	
DSM-disorders: logistic regression	OR 95% CI	OR 95% CI	OR 95% CI	AUC
Any disruptive	0.96 0.92; 1.01	1.07* 1.02; 1.12	1.05 0.96; 1.15	.654*
Attention-deficit hyperactivity	1.01 0.95; 1.08	1.09* 1.20; 1.17	1.05 .091; 1.20	.657*
Oppositional-defiant disorder	0.95 0.90; 1.00	1.08* 1.02; 1.14	1.04 .093; 1.15	.656*
Conduct disorder	0.90* 0.83; 0.97	0.92 0.82; 1.02	1.29* 1.07; 1.55	.749*
DSM-subthreshold: logistic regression	OR 95% CI	OR 95% CI	OR 95% CI	AUC
Any disruptive	1.01 0.96; 1.07	1.06* 1.02; 1.11	0.99 0.92; 1.06	.575*
Attention-deficit hyperactivity	0.99 0.95; 1.03	1.08* 1.04; 1.12	0.91 0.94; 1.07	.620*
Oppositional-defiant disorder	1.01 0.97; 1.06	1.06* 1.02; 1.11	1.01 0.95; 1.08	.590*
Conduct disorder	1.00 0.96; 1.04	1.09* 1.05; 1.13	1.00 0.94; 1.06	.636*
DSM-symptoms: linear regression	B 95% CI	B 95% CI	B 95% CI	R ²
Any disruptive	-0.013 -0.07; 0.05	0.144* 0.08; 0.21	0.108 -0.01; 0.23	.058*
Attention-deficit hyperactivity	-0.005 -0.05; 0.04	0.081* 0.03; 0.13	0.064 -0.02; 0.15	.036*
Oppositional-defiant disorder	-0.006 -0.03; 0.02	0.052* 0.03; 0.08	0.031 -0.01; 0.07	.047*
Conduct disorder	-0.002 -0.01; 0.01	0.011* 0.00; 0.02	0.013 -0.01; 0.03	.020
Impairment: CGAS-total score	0.046 -0.13; 0.22	-0.336* -0.50; -0.18	0.010 -0.26; 0.28	.039*

AUC: area under the ROC curve. *Bold: significant result (.05 level).

Annex. Distribution of APQ-Pr scores.

	Total (<i>N</i> = 603)		Girls (<i>N</i> = 301)		Boys (<i>N</i> = 302)		Sex
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	<i>p</i>
Positive parenting	62.6	4.78	62.6	4.83	62.7	4.77	.698
Inconsistent parenting	25.6	5.23	25.5	5.14	25.7	5.32	.600
Punitive parenting	20.0	3.55	20.1	3.46	19.9	3.65	.520